



Atty. Dkt. No. 053969-0125

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Michihiro OHSUGE  
Title: PATTERN GENERATION CIRCUIT, MULTI-PATH  
DETECTION CIRCUIT EMPLOYING THE SAME AND  
MULTI-PATH DETECTION METHOD  
Appl. No.: 09/770506  
Filing Date: 01/29/2001  
Examiner: Unknown  
Art Unit: 1194

#5

**RECEIVED**

**MAY 23 2003**

Technology Center 2600

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR §1.56**

Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR §1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

**TIMING OF THE DISCLOSURE**

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits, within three (3) months of the mailing date of the foreign office action, and within thirty (30) days of receipt of the foreign office action.

**RELEVANCE OF EACH DOCUMENT**

Any document listed on the attached PTO/SB/08 was cited as being relevant during the prosecution of the corresponding Japanese application.

The Japanese examiner stated in connection with the corresponding application in Japan:

Claims: 1 through 3, 6 through 11, 14 through 16, 18 through 20, 24 through 28, 30 through 32 and 35 through 37

Cited Literature: 1 and 2

Remarks:

Described in Cited Literature 1 (Claim 4, paragraph (0072)) is the fact that the next multi-path timing is successively detected by removing signals in a specified range in relation to a previously selected multi-path timing.

When comparing the invention described in Cited Literature 1 to the invention related to Claims 1 through 3, 6 through 11, 14 through 16, 18 through 20, 24 through 28, 30 through 32 and 35 through 37 of the present application, in the invention related to Claims 1 through 3, 6 through 11, 14 through 16, 18 through 20, 24 through 28, 30 through 32 and 35 through 37 of the present application, the theoretical pattern of a correlated peak--which is created based on a coefficient set in the channel filter, the peak form during 1 pass and a side lobe contained in that--is removed from the delay profile so that a previously detected path is not reassigned. In contrast, there is the difference in the invention described in Cited Literature 1 in that a mask is applied to the delay profile in order to prohibit selection of a sample that is in the specified range of a previously detected path timing.

Described in Cited Literature 2 (Claim 1, Detailed Explanation of the Invention (0028) through (0030), Figs. 2 through 5) is the technical concept that, in order to remove the influence of a pseudo-peak ("side lobe" in the invention of the present application) or of a transceiving filter on the correlated value, the theoretical self-correlating characteristics of a correlated value are pre-calculated taking into consideration the characteristics of the transceiving filter; and the correlated values other than the 0 chip phase of the theoretical self-correlating characteristics are removed from the receiving correlated values.

Moreover, the fact that the data of the correlated value related to the peak form during 1 pass is also included in the self-correlated characteristics is well-known technology. Therefore, when adopting the aforementioned technical concept described in Cited Literature 2 into the invention described in Cited Literature 1 as a means so that previously detected paths are not reassigned, it is easy to use pre-calculated self-correlated characteristics, including the correlated peaks of previously detected paths (peak form during 1 pass) to remove [correlated values] from the delay profile.

Consequently, a person skilled in the art could easily obtain the configuration of the invention related to Claims 1 through 3, 6 through 11, 14 through 16, 18 through 20, 24 through 28, 30 through 32 and 35 through 37 of the present application based on the inventions of Cited Literature 1 and 2.

Claim: 21

Cited Literature: 1 through 3

Remarks:

The fact that the maximum value of all correlated samples is detected by successively comparing the maximum value of the stored provisional correlative samples with the value of the correlated sample and refreshing the provisional correlated maximum value is nothing more than well-known technology (for example, paragraph Nos. (0024) through (0029), Fig. 2 of Cited Literature 3).

Claims: 1 through 3, 6, 7, 9 through 11, 14, 15, 18 through 21, 24 through 27, 30 through 32 and 35 through 37

Cited Literature (Prior Application): 4

Remarks:

Described in Cited Literature 4 (Claims 1, 2, 5, paragraph Nos. (0039) through (0060), Figs. 5 through 8) is the fact that, when detecting paths assigned to multiple fingers, a corrected delay profile is used to successively detect the next correlated maximum value by multiplying the correction coefficient, which is calculated based on information related to the filter roll-off percentage recorded in ROM and the correlated peak form, by the detected correlated maximum value. This is equivalent to the fact that, in the transmission circuit of the invention related to Claims 1 through 3, 6, 7, 9 through 11, 14, 15, 18 through 21, 24 through 27, 30 through 32 and 35 through 37 of the present application, multiple multi-paths are successively detected by removing [correlated values] from the delay profile by using a theoretical peak, which is created based on the peak form during 1 pass and a coefficient set up in a channel filter used in a limited band width. There is no unique difference between the invention related to Claims 1 through 3, 6, 7, 9 through 11, 14, 15, 18 through 21, 24 through 27, 30 through 32 and 35 through 37 of the present application and Cited Literature 4, and they are substantially the same.

#### List of Cited Literature

1. Japanese Unexamined Patent Application Publication H10-336072
2. Japanese Unexamined Patent Application Publication H10-308688

3. Japanese Unexamined Patent Application Publication H8-181636
  4. Japanese Patent Application 2000-10410 (Japanese Unexamined Patent Publication 2000-203608)
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Record of Prior Art Literature Search Results

- Fields searched IPC 7<sup>th</sup> Ed. H04J 13/00-13/06  
H04B 1/69-1/713
- Prior art literature
  - Japanese Patent Application H11-72740 (*Japanese Unexamined Patent Application Publication 2000-269860*) (Detecting the timing by successively masking the ultimate point of the correlated peak in a system with guard chips that conducts user multiplexing by varying the guard chip position of diffusion codes)
  - Japanese Unexamined Patent Application Publication H9-270735 (Removing side lobes by delay multiplexing and self-correlation)
  - Japanese Unexamined Patent Publication 2000-278177 (Removing side lobe peaks from the delay profile by transmitting self-correlated data on the percentage of sub-peaks of the main peak)
  - Japanese Unexamined Patent Publication 2000-252871 (Making a variable width for the mask that is applied to the correlated value corresponding to the peak interval)
  - Japanese Unexamined Patent Application Publication H8-32553 (Relationships of the band limitation widths of the Nyquist filter and FIR filter with the side lobe spread of the time waveform)
  - Japanese Unexamined Patent Publication 2000-101549 (Successive path timing detection by peak masking)

Document A1 is the U.S. counterpart to Document A6.

Document A2 is the U.S. counterpart to Document A7.

Document A3 is the U.S. counterpart to Document A10.

Document A4 is the U.S. counterpart to Document A12.

English translations or counterparts of Documents A5, A8, A9, A11, A13 and A14 are not readily available. However, the absence of such translations or counterparts does not relieve the PTO from its duty to consider the submitted foreign language documents (37 CFR § 1.98 and MPEP § 609). English language abstracts are attached.

Applicant respectfully requests that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP § 609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted;

Date 5/21/03

By

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Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  Date Submitted: May 21, 2003 <i>(use as many sheets as necessary)</i>				Application Number	09/770,506
				Filing Date	01/29/2001
				First Named Inventor	Michihiro OHSUGE
				Group Art Unit	1194
				Examiner Name	Unknown
Sheet	1	of	1	Attorney Docket Number	053969-0125

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A1	6,181,732	B1	KOMATSU	01/30/2001	
	A2	5,812,593		KAKU	09/22/1998	
	A3	5,960,028		OKAMOTO ET AL.	09/28/1999	
	A4	6,519,451	B1	NATORI ET AL.	02/11/2003	

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	A5	JP	10-336072	A	NTT IDO TSUSHINMO KK	12/18/1998		ABS.
	A6	JP	10-308688	A	NEC CORP.	11/17/1998		ABS.
	A7	JP	8-181636	A	NEC CORP.	07/12/1996		ABS.
	A8	JP	2001-203608	A	MITSUBISHI DENKI KK	07/27/2001		ABS.
	A9	JP	2000-269860	A	YRP MOBILE TELECOMMUNICATIONS KEY TECH. RES. LAB. CO. LTD.	09/29/2000		ABS.
	A10	JP	9-270735	A	SHARP CORP.	10/14/1997		ABS.
	A11	JP	2000-278177	A	SANYO ELECTRIC CO. LTD.	10/06/2000		ABS.
	A12	JP	2000-252871	A	SONY CORP.	09/14/2000		ABS.
	A13	JP	8-32553	A	MATSUSHITA ELECTRIC IND. CO. LTD.	02/02/1996		ABS.
	A14	JP	2000-101549	A	NEC CORP.	04/07/2000		ABS.

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>

Examiner Signature

Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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